A53.E506
JACC March 9, 2010
Volume 55, issue 10A

HYPERTENSION, LIPIDS AND PREVENTION

OPTIMAL PLASMA LOW-DENSITY LIPOPROTEIN CHOLESTEROL BUT ABNORMAL TRIGLYCERIDES: IS IT ALSO A RISK PROFILE FOR CARDIOVASCULAR MORTALITY?

ACC Poster Contributions
Georgia World Congress Center, Hall B5
Sunday, March 14, 2010, 3:30 p.m.-4:30 p.m.

Session Title: Treatment of Hypertriglyceridemia
Abstract Category: Pharmacology/Hormones/Lipids–Clinical
Presentation Number: 1076-113

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Background: The role of plasma triglycerides (TG) in cardiovascular disease (CVD) is widely debated. Although some studies have demonstrated that CVD risk among individuals with similar levels of low-density lipoprotein cholesterol (LDL-C) may be driven by their plasma triglyceride levels, the importance of triglycerides requires further clarification.

Methods: The baseline data were collected as a part of the Third National Health and Nutrition Examination Survey (NHANES III), a nationally representative sample of non-institutionalized civilians. A cohort of 3,972 adults aged 40 years and older at baseline (1988-1994) was followed through December, 2000 for mortality from all causes using the NHANES III Linked Mortality File. Optimal LDL-C and normal TG were defined as fasting level <100 mg/dL and <150 mg/dL, respectively. Cox proportional hazard models were used to estimate the hazard ratio (HR) of death for the group with optimal LDL-C/abnormal TG (n=188) in comparison with the optimal LDL-C/normal TG group (n=455) after adjusting for age, race-ethnicity, lipid-lowering medication, and established CVD risk factors.

Results: A total of 170 all-cause and 68 CVD deaths were observed among participant with the optimal LDL-C. Compared to "optimal LDL-C/ normal TG", "optimal LDL-C/abnormal TG" profile was significantly associated with CVD mortality (adjusted HR, 2.2; 95% CI: 1.3–3.6). However, these associations were modified by age and gender. "Optimal LDL-C/abnormal TG" profile was strongly associated with CVD death in adults 40-65 years (adjusted HR, 2.9; 95% CI: 1.1–7.3) and women (4.6; 95% CI, 2.2–9.7) but not in older adults (65 yrs and older) (adjusted HR, 1.9; 95% CI: 0.96–3.7) or men (adjusted HR, 1.2: 95% CI: 0.5–2.6). Among women, "optimal LDL-C/ abnormal TG" profile was also a significant independent predictor of all-cause mortality (1.9; 95% CI: 1.1–3.3).

Conclusion: In our large nationally representative longitudinal study, "optimal LDL-C/ abnormal TG" lipid profile was significantly associated with cardiovascular mortality, particularly in adults 40-65 years and women.